THE RELATIVE VALUE OF OPERATIVE AND HYGIENIC MEASURES IN THE TREATMENT OF TUBERCULOSIS AND NEOPLASMS OF THE BLADDER.[1]

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AMONG the many troublesome cases of disease of the bladder that we are called upon to treat, none are more troublesome than those due to tubercular infection. At first, the symptoms in these cases are often so obscure, and so similar to those produced by other morbid conditions, that the diagnosis is frequently doubtful and in many even impossible. Later on, the clinical picture becomes so characteristic that all doubt as to the diagnosis is removed; but, at this stage, treatment can effect but little, even in the mitigation of the sufferings of these patients, whose hope of *cure* is now out of the question. If, however, the disease can be discovered in its incipiency, and proper measures taken for its relief, I believe that it may be regarded as curable, certainly in the sense of being in abeyance.

Although I am well aware that much has been said and written on this subject, I venture to present, in brief, some cases of tuberculosis of the bladder which I think illustrate the course of the disease, and from which may possibly be deduced certain principles regarding treatment. It may be observed that they are not all cases of lesion of the *bladder*, strictly speaking, but as the prominent and early symptoms are referred to this viscus,

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I have classified them thus for purposes of description. They are selected from many in order to illustrate points in diagnosis and the advantages of hygiene, even after the failure of zealous and prolonged efforts with other methods of treatment.

CASE I.—H. K., a young man, aged twenty-seven years, who came under my observation on March 25, 1891. The following is a synopsis of his history: He denies all venereal diseases. Was well up to a year and a half ago, when he noticed a slight burning pain near the head of the penis on urination. It had no relation to the act of coitus. This pain gradually became more severe, and on several occasions a clot of blood came with the first gush of urine. There was no frequency at that time. This pain on urination disappeared under medical care, washing of the bladder being resorted to, and the patient married in September, 1890. A few weeks later the pain returned, accompanied by frequent micturition. There was also severe pain on coitus. He again placed himself under the care of a physician, by whose advice one of his testicles was removed; why, he could not state.

When he came under my observation in March, 1891, he had no gonorrhœa and no urethritis, but his urine was turbid and loaded with flakes and shreds. He was unable to hold his urine for over an hour, the pain and tenesmus were severe, and he stated that when he strained at stool a white substance escaped from the penis. Per rectum, both vasa deferentia and the prostate were found to be nodular, indurated, and tender. Bacteriological examinations of his urine, frequently repeated, were negative. All sorts of treatment of the bladder and deep urethra failed to relieve him; on the contrary, his symptoms were aggravated by instrumentation and applications. On June 2 the bladder was opened above the pubes, and the intensely hyperæmic mucous membrane, here and there ecchymotic, was curetted, and a counter-opening made in the perineum. For a time, through drainage was attempted, but subsequently, the perineal tube becoming intolerable, permanent drainage was maintained by the suprapubic opening. After six months of drainage (June, 1891, to January, 1892) the tube was removed. In the mean time, with the exception of the first six weeks, he had been living in the hills of New Jersey and had improved in general condition. He then returned to his work in a printing-office, free from pain, but urinating about every two hours. At the end of two weeks he had an attack

of fever, anorexia, and general malaise, and a return of frequent urination, sometimes as often as every fifteen minutes. The suprapubic sinus reopened, and a month later the perineal one also. In spite of my objections he kept at his work in a close, ill-ventilated office, and his symptoms generally became aggravated until by the end of February he was unable to work. In March, 1892, I induced him to find employment with a farmer in the same hilly country where he had been before. By the first of May, although driving a produce-wagon and exposed to all weather, he had improved greatly. He could hold his urine two to two and a half hours. He had no pain at all and could work freely. His urine was slightly turbid and contained a few shreds and flakes. He remained in the country, and in October he was holding his urine four hours and seemed well. In January, 1893, the cold became so severe that he was compelled to give up his out-of-door occupation and he went into a printing-office again. A return of irritability of the bladder and a little pain at the end of the act of urination frightened him, and he readily acceded to my direction to go to Los Angeles, Cal., where he remained till October, 1894, when he returned to New York. At this date he was apparently well, urinating once in four or five hours, without pain. His urine was clear with the exception of a few shreds and flakes, and coitus was indulged in without pain. Since then I have not seen him, but I believe that if unpleasant symptoms had developed, he would, in obedience to my directions, have reported to me.

The noticeable diagnostic symptom in this case was the pain on urination. It began without any frequency of urination and without any antecedent gonorrhœa. It was not associated with any evidence of traumatism or stone, nor was it related to any sexual excess. There was none of the burning sensation between the acts of urination which is so common in cases of gonorrhœal origin, but the pain which was developed by the function of urination was of a burning character, though slight in grade. Gradually the pain became more severe, and another feature was added,—namely, a small clot of blood with the first gush of urine, but still without frequency. These symptoms may have been due at that time to sexual hyperæmia, for they were relieved by treatment, and the patient married. But a few weeks after marriage the pain returned, now accompanied by frequent urina-

tion and by severe pain on coitus. Here was a suspicious circumstance. Sexual hyperæmia had again prepared the way for a reawakening of the original focus or had developed a new one, and at this time, in my opinion, a hygienic mode of treatment should have been insisted on. Thereafter all instrumentation, all applications, all local and surgical measures, including unilateral orchidectomy, aggravated his symptoms, and he went on rapidly from bad to worse. Even after the prolonged drainage, which I carried out faithfully, he had relapse after relapse, only relieved by a life in the open air, and, finally, a cure (?) achieved by a climate where life in the open air could be the rule and not the exception. I have repeated this observation so often in cases where the pain cannot be referred to a distinct ulceration or to some one of the tangible causes referred to, that I insist upon hygienic methods before resorting to surgical ones. To emphasize the effect of hygiene in a case subjected first to a surgical treatment, let me take another of similar import.

CASE II.—J. K., aged thirty years; married; no children. Had an attack of gonorrhœa twelve or fourteen years ago. When he came under observation, on January 3, 1892, he stated that for over seven years he had suffered from dysuria, but was able to hold his urine about two hours, on the average. He had never passed any blood, excepting during his attack of gonorrhœa, and also after the passage of a sound, when he was told that he had a stricture. About two years ago a competent surgeon operated on him, attempting drainage by external urethrotomy, but he could bear the tube only twenty-four hours, and his symptoms were not relieved. His frequency gradually became worse, until he was obliged to urinate every fifteen or twenty minutes. This symptom was so severe that he was in the habit of sleeping on the floor, because he wet the bed so constantly. There was also great pain and tenesmus. Irrigation of the bladder with different solutions, applications of various kinds, and the iodoform treatment gave only slight relief, and even this was temporary. On February 9, 1892, I did a suprapubic cystotomy. No tumor nor ulceration was found, but the bladder walls were soft and intensely hyperæmic; so much so, that while filling the bladder with fluid preparatory to doing the operation, a slight rupture of its anterior wall occurred; this immediately closed and no serious consequences

resulted. There was marked improvement after the drainage was instituted, especially as to the relief from pain. The patient left the hospital on April 4, still wearing a hard-rubber-plate, tube and bag, into which the urine drained continuously. On May 26, after sixteen weeks of drainage, the tube was removed. He was free from pain, but urinating every fifteen or twenty minutes till the end of June, when the pain at the end of micturition returned. All local treatment made him worse. He was as badly off as before, and suffered from great frequency and tenesmus. In September, 1892, he developed a subacute epididymitis on the left side. The following month the corresponding testicle began to swell and became very painful, and an abscess formed, which was evacuated and dressed with iodoform. In November of the same year he was advised to go to Southern California. He did so, and under date of July 10, 1893, he writes from there as follows: "While I am not entirely well, I have nothing to complain of and am in good health. My testicles are all healed up, and they appear to be as good as they ever were. I have no pain whatever on urinating; still, I urinate every fifteen or twenty minutes. I am very strong and work every day."

It will be observed that this patient was of about the same age as the preceding one, and that the prominent symptoms were the pain, related to the act of urination, and the frequency, at first not oftener than once in two hours, but the intervals gradually shortening until the act was repeated every fifteen or twenty minutes. Also in his case bacteriological examinations, conducted most carefully in the laboratory, gave negative results until late in his history, when tubercle bacilli were found in the pus from his testicle. In his case there was no nodulation of the prostate or seminal vesicles, and no kidney lesion could be determined, but the clinical picture made my diagnosis of a tubercular process quite certain, and subsequently this was confirmed by the finding of Koch's bacilli. You will observe also that all local and surgical treatment was followed by no permanent benefit, and that although his residence in the same climate as the other patient relieved him from pain, there was still increased and abnormal function of the bladder. To illustrate the advantages to be derived from simple hygienic measures, permit me to report the following case:

CASE III.—The patient was a young man, aged twenty-three years, who never had had gonorrhœa nor other venereal disease; he was a straightforward, manly, upright fellow, whose history and character were as clear as crystal. In January, 1893, he had what he called a bad cold, with fever, and on the second day after the fever he had pain in the perineum and a sudden discharge of pus and blood from the urethra, accompanied by severe pain. When he came under my observation in June of that year he had a subacute, purulent, urethral discharge; the urethra was very tender and the meatus swollen. There was no blood present, but he stated that once about every two weeks a little blood followed the act of urination. At that time the intervals of urination varied from every half hour to once in two hours. Per rectum, the prostate was slightly swollen and tender and at the base of one lobe it was distinctly nodulated. Bacteriological examinations of the urethral discharge proved negative as to tubercle bacilli, but the pus was very abundant. No cultures were made. There was a tubercular family history, and he stated that about two years prior to his present trouble he had had an operation performed on one foot for an open sore of some kind. He was unable to give any definite clinical history of this sore, but he stated he was a long time in recovering from the effects of the operation, the scar of which can be seen upon his foot, and has no characteristics by which to define its nature. In this case, in spite of the negative results of the examination, the diagnosis of the tubercular process seemed so positive that I insisted that he should go to the mountains, and remain there at least two years. He went to the Blue Ridge region of Pennsylvania, and from there to the Adirondacks, in New York, where he remained until the following autumn. He gained steadily in weight, his urethral discharge entirely disappeared, and his urinary intervals lengthened so that he urinated but once every three hours and once during the night. Believing himself to be well, he returned to the city and went back to his studies at college. In a short time, which was indefinitely stated, his symptoms began to get worse and he was brought to me again in April of the following year. Nocturnal urination had returned, he had a slight urethral discharge and the same burning pain which comes just as the stream of urine starts, and sometimes this is so severe as to induce a spasm which shuts off the flow of urine in mid-stream. The sensitive deep urethra was gently treated with iodoform, and again he was sent to the country, where he remained until December, 1894. He gained twenty-four pounds.

There were a few shreds or flakes in his urine, but he had no pain, no frequency of urination, and he considered himself tolerably well. I insisted upon prolonged residence out of the city, and my advice having been followed, he still remains well.

I have chosen these cases as typical of many. The patients were about the same age; the commencement in each case was about the same, and their course up to the time of beginning treatment was similar. In the last case, however, there was a minimum of instrumentation, which was done only for the purpose of relieving the acute symptoms. No surgical measure was instituted, and he was submitted to the curative influence of a hygienic mode of life,—a radical change from his usual existence. Vitalization of tissue is what these patients need, and they require at least two years of good hygienic residence in a temperate climate; but besides climate, they need occupation, for in my observation *ennui* seems to be almost as deteriorating as confinement to the house. Surgical traumatism, produced by over-zealous efforts to relieve local symptoms, seems to me to result in more harm than good. Such efforts are apt to put the unhappy patient still further below par, and facilitate the development of other tubercular foci either in the same organ or in one more distant. It is not necessary to enter into the question of whether the infection is an "ascending" or a "descending one." The phrase deceives us. The bacilli are in the individual's blood, and they only await a local congestion (following some form of irritation) in order to lodge and proliferate.

After faithful and zealous efforts to relieve by surgical interference the local symptoms of these cases, I have been forced to the conclusion that the less instrumentation we resort to, the better. In the genito-urinary tract, as in the tubercular process elsewhere, the best defence of the tissues against the inroads of the bacilli and that which finally effects a cure is to be attained only by enabling the body to surround the tubercular deposits with a layer of healthy connective tissue. It seems to me this can be done in no other way than by improving the quality and resisting power of the individual.

In strong contrast with the foregoing group, permit me to

lay before you a class of cases very common, and in which the possibility of a cure also depends upon their early discovery. Unfortunately, in these cases, many of the early symptoms are overlooked, or, if appreciated, are misunderstood. The patients themselves, because of the insidious onset of the disease, become accustomed to their first symptoms and usually do not seek the advice of their medical attendant until the affection is well advanced.

I have chosen the three following cases, because each represents a distinct pathological condition, and their study, I believe, will prove to be instructive:

CASE I.—The first case is one of sarcoma of the bladder, with the following history: The patient was a well-preserved man, aged fifty-one years. In January, 1892, he began to have frequency of urination, say every two hours, without pain. At that time there was no change in the urine, excepting that at intervals of from three to six weeks the urine contained a moderate amount of blood. These paroxysms would last about three days, when the blood entirely disappeared. In May, 1893, for the first time he passed a small clot of blood, which came with the first gush of urine. Two or three days later he had chills, with a rise of temperature and increased frequency of urination,—that is to say, every half hour,—and for the first time he had pain before, during, and after each act of urination. The urine now contained pus and mucus and also blood without intermission, the latter persisting for several days. He evidently had an attack of cystitis, which came on without instrumentation, and an interesting query would be, How did pus microbes find access to this bladder? The blood and pus gradually decreased in quantity, but did not entirely disappear. Some improvement also took place in the intervals of urination, but towards the end of May he again had an attack of chills, with a rise of temperature to 102° F., and was confined to bed for about ten days. Again improvement gradually took place.

When he came under my observation, in July, 1893, he was urinating every two hours and pus and blood were still present. With the first flow of urine came a little gush of blood and clots of muco-pus. The whole volume of urine was tinged with blood, bright in color, and not smoky. An examination of the urethra was negative. Examination of the prostate showed some lateral and median

enlargement. The prostatic urethra was extremely sensitive, and a search for stone or neoplasm was negative. It was impossible to cystoscope him without the aid of an anæsthetic, and this he declined. He also declined any exploratory operation, and he was temporized with until the following autumn, hot-water irrigations being used to check the hæmorrhage.

In November, 1893, he again came under my care, and an operation being consented to the bladder was opened by the suprapubic method without antecedent cystoscopy. The free blood, its bright color, its relation to the act of urination, the presence of clots and the history of cystitis, with the long-continued cycles of hæmorrhage made a diagnosis of neoplasm in the bladder extremely probable. When the bladder was opened and its interior explored, at first nothing was seen but the intensely hyperæmic mucous membrane. Apparently, the whole interior of the bladder was of this character, and no salient, projecting new growth of any kind was to be seen. Careful exploration with the finger, however, revealed a soft, flap-like body, growing from about two-thirds the circumference of the internal orifice of the urethra, hanging down over the latter and from which it could be partially lifted like a small curtain. It was disk-like, so that when looked at from above it appeared to be a continuation of the anterior mucous wall of the bladder, but when the bladder was distended by instruments, in order to bring into view the urethral orifice, it was seen that the latter was more or less obscured by this new growth. It bled on the least touch. It was friable, and was removed in piecemeal by means of the scissors, together with the underlying tissue wall of the bladder. Macroscopically, the nature of the growth could not be made out. The report from the laboratory regarding it is as follows: "It is unquestionably malignant,—probably carcinomatous,—but there is some question as to whether the cells are large, round sarcoma cells or epithelioma. Microscopically, the growth is very near the border line of carcinoma and sarcoma."

The immediate history of the patient after the operation was uneventful. Before the suprapubic sinus entirely healed there was a recurrence of the hæmorrhage, and the further progress of the case may be summed up in a few words. It was evident that there had been a rapid recurrence of the disease, but the man refused all further operative interference. The hæmorrhage and frequency persisted, and the pain necessitated the constant use of morphia. The patient died in October, 1894.

Here was a man with a disorder of the urinary apparatus, which he allowed to exist for over a year before seeking competent medical advice, and the strong presumption is that if a diagnosis could have been made at an early stage, a radical cure of the neoplasm could have been effected. In regard to this, however, I would be guarded in my statements, because we all know the tendency of such growths to recur, and the difficulty of entirely eradicating them, but I believe that in the bladder—as in the breast—primary, free excision, followed if necessary by secondary operations, gives us the best possible chance of effecting a permanent cure. I am aware of the difficulties that surround the early diagnosis of neoplasms of the bladder, but without doubt at an early stage he could have been cystoscoped, his condition recognized, and the progress of the disease retarded at least.

I might add that so much hæmorrhage from such a small growth is not uncommon. It sometimes seems as if a large part of the blood-current of the bladder wall were diverted by a neoplasm not larger than this one.

CASE II.—This patient was a male, aged forty-two years. In May, 1890, he first noticed that he had to hurry when the desire came on to urinate. With that exception he had been perfectly well. The intervals of urination were not shortened. About this time he was married, and soon after he noticed a slight discharge of blood immediately after urination. This would occur about once a month, and was without pain. Gradually, the intervals of urination shortened, and the hæmorrhage increased and appeared more frequently. This went on until one year before coming under observation, when he began to get up once or twice at night to pass his urine. Four months later pain appeared for the first time, especially at the end of urination, and there was more blood in the urine, associated with great tenesmus. Clots also began to appear in his urine, and these since then have been constant. Another symptom gradually added was that when his bowels moved the tenesmus was increased, and at the end of the act of urination a drop of what he described as mucus appeared at the end of the penis.

When he first came under my observation the bladder was ex-

tremely irritable. It was incapable of holding more than three ounces of urine, and the whole volume of urine was stained with blood, bright in color, and at the end of each act of urination clear blood was squeezed out. The man was pale, thin, extremely cachectic, and very weak. It was impossible to cystoscope him without an anæsthetic, and inasmuch as the diagnosis of foreign body or new growth in the bladder was tolerably clear, I advised immediate operation. The suprapubic opening was accordingly made, and as the bladder wall was cut through, soft, spongy epithelial masses protruded from the opening. Examination with the exploring finger revealed that the bladder was (literally) filled with these epithelial, cauliflower-like outgrowths, and its small capacity was readily explained. They sprang from all sides of the bladder, as well as the base and fundus, and it was utterly impossible to remove them. The hæmorrhage was profuse. It seemed wise to give him the benefit, if any, of drainage, and further operation was decided against. The only benefit derived from the operation was relief from the frightful tenesmus and frequent urination. The patient died the following September. The report from the laboratory was as follows: "The specimen is typical of carcinoma, of squamous or epidermoidal type."

This case, when compared with the other, shows that the first symptom in both was frequent urination, without either pain or blood. In both cases, these latter symptoms appeared later. The condition of the bladder in these two cases was entirely different. In the first there was a small, flat, disk-like body, while in the second the cavity was almost filled with a mass of cauliflower-like growths. I believe that in the second case, as in the first, an early diagnosis might have offered a fair possibility of effecting a radical cure.

CASE III.—In this case the symptoms differed entirely from those in the two just narrated. The patient was a male, in apparent good health, who had a sudden attack of complete retention of urine lasting ten hours. This occurred one year before he came under my observation, which was in December, 1894. During his attack he had no medical attendance, and the retention, it seems, was relieved spontaneously, but subsequently he had to urinate every two hours, day and night. He had some pain, which he referred

to the sacral region and attributed to rheumatism. In June, 1894, a little blood appeared in his urine on one occasion, but he could not tell what relation this had to the act of urination. In October, 1894, under the care of a doctor, a catheter was passed and three pints of residual urine were drawn; since then he has been regularly catheterized and washed. He cannot now, nor has he been able since then, to urinate spontaneously. There has been gradual emaciation, and the man is cachectic in the extreme. His urethra is narrowed to such a degree that only a No. 5 French catheter can be used. A bimanual examination shows that a neoplasm has converted the prostate and base of bladder into a large, hard, irregular, insensitive mass. It occupies the whole inferior segment of the pelvis, extending laterally, upward and backward, as far as can be reached. The prostatic portion of the urethra is evidently encroached upon and its calibre reduced, but the bladder retains a satisfactory capacity. The inguinal glands on both sides are hard and double their normal size.

It is plain that here is an entirely different pathological condition from the others which I have reported. This case differs in the insidious character of its onset, and its rapid progress, less than one year having elapsed, so far as we know, since the first manifestations of the presence of the growth,—namely, the sacral pain and the retention of urine. Palpation shows the growth to be scirrhus in nature, making the diagnosis tolerably certain. This man has had no pain, excepting that referred to in the sacral region. He has had no hæmorrhage, and yet the neoplasm has existed long enough to become generalized, for the man is dying of cachexia.

I have contrasted these two groups in order to present for your discussion the points,—

(1) That incipient cases of tubercular origin should be subjected to hygiene rather than to surgery; and,

(2) That in the incipient stages of neoplasms surgical procedures of the most radical kind should be instituted.